



INSTALLATION INSTRUCTIONS FOR CERWIN-VEGA RESIDENTIAL SPEAKER SYSTEMS

This Cerwin-Vega speaker system is equipped with highly efficient components interfaced with an enclosure designed to provide optimum performance. A few simple hints will enable you to adjust to your listening preferences and room acoustics to extract maximum enjoyment from your music system.

SPEAKER PLACEMENT

REFLECTING SYSTEMS (MODELS 211 (R), 217 (R) and 432 (R))

Reflecting systems require a space between the rear of the cabinet and wall for effective radiation. The deep bass response emitted from the bottom duct requires a minimum spacing of 3-4 inches. The reflected mid-high at top rear requires 6 to 12 inches spacing. The greater the spacing the larger the acoustic image reflected. However, if the spacing exceeds 12 inches the bass response will be attenuated. An effective average is 8-10 inches. There should be no obstruction such as a shelf above the cabinet as it would destroy the mid treble image. Minimum clearance is 18 inches above the speaker. A particularly effective placement is diagonally across a corner with the cabinet corners 3-4 inches from the two walls. The bass coupling to the room is maximum, and the reflection is three dimensional providing a large diffuse acoustic image. Corner placement will require increasing the level control of rear radiating driver to match the increased bass efficiency. Correspondingly raising the cabinet from the floor to a shelf location will reduce the bass response requiring a reduction in rear driver level to keep balance. For shelf operation the speaker cabinet is turned on its side with bass duct toward the corner wall with the necessary 8-10 inch clearance. The mid-range reflection is toward the center providing a center fill allowing wide or corner spacing. Non reflecting systems spaced too far apart suffer from center hole effects.

NON-REFLECTING SYSTEMS (MODELS 24, 26 and 211)

For non-reflecting speakers a particularly effective placement is diagonally across a corner with the cabinet, 3-4 inches from the walls. In this position bass coupling to the room is maximum. In some cases you may find that in this position the bass will be so strong that a reduction of bass may be required. This can be accomplished by moving the system off the floor and or away from the corner of the room (intermediate positions produce a proportional decrease in bass) or by turning down the bass boost on your pre-amp. This is the preferable way because you are also allocating available amplifier power for the rest of the audio range. Decreasing distortion, increasing head room and saving amplified cost.

CONNECTING WIRE

Ordinary lamp cord (18 gauge) is fine for connecting speaker to amplifier for runs less than 75 ft. Longer runs require heavier gauge to keep losses low and damping factor high.

SPEAKER PHASING

The sound won't be properly reproduced unless both speakers are in phase (unless both speakers' cones move back and forth simultaneously in response to a common signal from the amplifier). One way of checking phase is to follow the colored thread or raised bead that usually lets you distinguish the two leads of a lamp cord. The speaker's terminals should be connected to like terminals on the amplifier. Or put the speakers close together and listen to monophonic materials, paying particular attention to the bass. (Play a record in mono, or listen to an FM station broadcasting in mono.) Then reverse the leads of one speaker and listen again. If you hear significantly more bass, the speakers are now in phase. If you hear much less bass, they were in phase to start with.

LEVEL CONTROLS

REFLECTING SYSTEMS (MODELS 211 (R), 217 (R) and 432 (R))

Two level controls are provided: one is for the rear reflecting driver and the other for the front radiating dhorn. Calibrations are reasonably accurate (0, -3, -6, -10 db). With normal floor placement the front dhorn is usually wide open (0 db attenuation). Rear driver settings approximately -3 to -6 db for popular music and -10 to -6 db for classical music are typical. Room absorption and listener judgment will determine the final setting. The above are only nominal.

NON-REFLECTING SYSTEMS (MODELS 26 and 211)

The non-reflecting systems made by Cerwin-Vega, model numbers 26 and 211, are equipped with a level control mounted on the cross-over panel. This potentiometer determines the output level of the tweeter mounted near the top front of the enclosure. Source materials, room acoustics, speaker placements, and individual taste will determine the final setting of this control.

POWER REQUIREMENTS

Cerwin-Vega speakers are as efficient as state of the art permits without sacrificing other desirable characteristics. If some low efficiency speakers claim a minimum of 20 watts, then for equal sound pressure (loudness) a minimum for Cerwin-Vega speakers would be 3 watts. Obviously somebody is bending the truth. Most manufacturers of low efficiency speakers are embarrassed to reveal the true power requirements of their speakers. Some require as much as 500 watts RMS for comparable levels of 50 watts into high efficiency speakers.

INCREASING THE SIZE OF YOUR AMPLIFIER

Of all the musical instruments the ones that perform in the bass regions require the most power to reproduce. The lower the note the more the power needed from your amp. An effective way to increase the over all undistorted output power of your amp is to place the speakers in a position that helps accentuate bass in your room (ie: on the floor in a corner.) In many cases you'll find under these conditions the bass octaves will be too loud. By simply decreasing the bass tone control on your pre-amp or receiver you can effectively bring the bass back in balance while significantly increasing the clean power output of your amplifier.

RUMBLE AND SUB-SONIC DISTORTION

All Cerwin-Vega speaker systems are designed to accurately reproduce the lowest audible bass fundamentals. Reproduction of signals below 16 Hz is usually undesirable. Furthermore, we know of no recording on the market with a signal below this point. The only time a signal of this type is produced is by, 1) turntable rumble, 2) acoustic feedback or, 3) most commonly, warped records. If you are the owner of a high powered amplifier with little or no limiting characteristics, it would be advisable for you to examine your records for warpage, as well as having a properly positioned, high quality turntable that is not affected by the extremely solid and powerful signal emitted by your Cerwin-Vega speaker.

The high level passing of a sub-audible transient could cause your speaker to "bottom", (bottoming is the over-exursion of the speaker, characterized by a rapping or popping sound).

If you do bottom your speaker, check your record for warpage, the position of your turntable, etc.. If your amplifier or receiver is equipped with a rumble or low frequency filter activating that switch will effectively eliminate any unwanted low frequency signal to your speakers. If your receiver isn't so equipped, the best solution would be a filter designed for signal cut-off at 20-30 Hz. This could be placed between the pre-amp and the amplifier without modifying the amplifier.

If none of the previous solutions can be implemented or are effective, then an acoustical filter can be improvised. To reduce woofer excursion below 15 Hz a wad of fiberglass stuffed into the bass duct will significantly reduce unwanted low frequency response. The effect on the useful bass range is minimal. The best overall solution is still a sharp 25-30 Hz filter before the power amplifier such as the pre-amp rumble filter. In low cost receivers where a filter is not available damping the duct with glass is an effective solution.

A WORD ABOUT A-B COMPARISONS OF SPEAKERS

Several methods have been used to compare different brands of speakers. Some more honest than others. The most dishonest and misleading practice is that of inserting series resistors or an L pad after the power amp to adjust the efficiency differences between speakers. This not only destroys the damping benefit of the amplifier but also penalizes the more efficient speaker by allowing the power amp to be driven to peak clipping. An untypical situation that would not occur when installed at home (unless you are silly enough to waste costly amplifier power heating up resistors). Under any conditions a speaker driven through a resistor does not sound the same when driven directly from the amplifier terminals. Setup of this type can be categorically rejected as invalid. A fairer method is to adjust level differences in the preamplifier such as the balance control, and comparing monophonically left and right speakers for tone differences. This is a preliminary test. A final test should be at maximum crescendo at full amplifier power to test for breakup and distortion. Home comparison can easily be made using the multiple speaker switches on most modern amplifiers.



FOR A LIST OF DEALERS IN YOUR AREA CONTACT:

CERWIN-VEGA • 6945 TUJUNGA • NORTH HOLLYWOOD, CA 91605 • (213) 769-4869